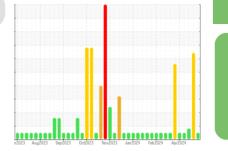


OIL ANALYSIS REPORT



Sample Rating Trend



NORMAL

DIAGNOSIS Recommendation

Contamination

Fluid Condition

suitable for further service.

Wear

oil.

Machine Id

Resample at the next service interval to monitor.

There is no indication of any contamination in the

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is

All component wear rates are normal.

Byron Center CAT 1 BYCM01BE Biogas Engine

CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0877036	WC0877034	WC087701
Sample Date		Client Info		09 May 2024	29 Apr 2024	19 Apr 2024
Machine Age	hrs	Client Info		87881	87642	87445
Oil Age	hrs	Client Info		72	599	407
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	SEVERE	ABNORMA
CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method		NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history
Iron	ppm	ASTM D5185m	>14	<1	8	2
Chromium	ppm	ASTM D5185m	>3	<1	<1	<1
Nickel	ppm	ASTM D5185m		0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>5	2	2	2
Lead	ppm	ASTM D5185m	>8	<1	0	0
Copper	ppm	ASTM D5185m	>5	<1	4 5	0
Tin	ppm	ASTM D5185m	>3	1	<u> </u>	A 3
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		7	5	3
Barium	ppm	ASTM D5185m		1	<1	0
Molybdenum	ppm	ASTM D5185m		10	6	3
Manganese	ppm	ASTM D5185m		<1	2	<1
Magnesium	ppm	ASTM D5185m		11	17	11
Calcium	ppm	ASTM D5185m		1718	1930	1831
Phosphorus	ppm	ASTM D5185m		309	288	282
Zinc	ppm	ASTM D5185m		321	349	337
Sulfur	ppm	ASTM D5185m		2767	3886	3649
CONTAMINANTS		method	limit/booo		history1	history
		memou	limit/base	current	TIIStOLA	
Silicon	ppm	ASTM D5185m		current 47	196	136
Silicon Sodium	ppm ppm		>180		,	
		ASTM D5185m	>180 >20	47	▲ 196	136
Sodium	ppm	ASTM D5185m ASTM D5185m	>180 >20	47 0	▲ 196 1	136 <1 2
Sodium Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>180 >20 >20	47 0 6	▲ 196 1 0	136 <1 2
Sodium Potassium INFRA-RED	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	>180 >20 >20	47 0 6 current	▲ 196 1 0 history1	136 <1 2 history2
Sodium Potassium INFRA-RED Soot %	ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	>180 >20 >20	47 0 6 current 0	▲ 196 1 0 history1 0.1	136 <1 2 history2
Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624	>180 >20 >20	47 0 6 current 0 5.2	▲ 196 1 0 history1 0.1 6.0	136 <1 2 history2 0.1 5.9 23.8
Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415	>180 >20 >20 limit/base	47 0 6 current 0 5.2 17.4	▲ 196 1 0 history1 0.1 6.0 26.0	136 <1 2 history2 0.1 5.9
Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm % Abs/cm Abs/.1mm TION	ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415 method	>180 >20 >20 limit/base	47 0 6 current 0 5.2 17.4 current	 ▲ 196 1 0 history1 0.1 6.0 26.0 history1 	136 <1 2 history2 0.1 5.9 23.8 history2

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OIL ANALYSIS REPORT

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML NEG

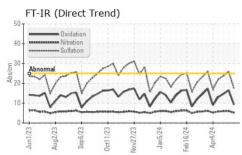
NEG

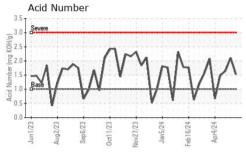
13.5

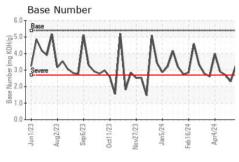
eb16/24

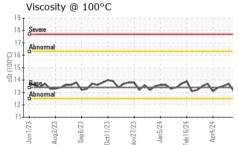
eb16/2

Feb16/24 Vor4/24









White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual		NEG	NEG
Free Water	scalar	*Visual		NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history1
Visc @ 100°C	cSt	ASTM D445	13.4	13.1	13.7
GRAPHS					
Iron (ppm)			1	Lead (ppm)	
0 Severe	۸.			Severe	
5 Abnormal	1AA		1	T	
	VIII		ШШ		
SmIN	. 11		Λ.	5	
	L	~		0	
Jun1/23 Aug2/23 Sep6/23	Nov27/23	Jan5/24 Feb16/24 Anr4/24		Jun 1/23 Aug 2/23 Sep 6/23	0ct11/23 Nov27/23
Aluminum (ppm)	-	Ľ		Chromium (p	
²] Saura		112220		⁵ T 3333555555555	
0 - 0				4 - Severe	
6 - Abnormal			and a	3 - Abnormal	
				2	
	~~	\sim	~	l	~
Jun1/23 Aug2/23 Sep6/23	Vov27/23	Jan5/24 Feb16/24 Anr4/24	-	Jun1/23 Aug2/23 Sep6/23	0ct11/23 Nov27/23
	Nov	Ja Feb		, 4	Nov
Copper (ppm)		1700000000000	25	Silicon (ppm)	
5 Severe			20	0 - Severe	-AA-
0-			E 15	· 1/ //	NV V
Abnormal			e ¹⁵ 10		V)
			Λ 5		
		24		23 + 10 23 + 0	23 -
Jun 1/23 Aug 2/23 Sep 6/23	Nov27/23	Jan5/24 Feb16/24 Anr4/24		Jun 1/23 Aug 2/23 Sep 6/23	0ct11/23 Nov27/23
Viscosity @ 100°				Base Number	
⁰ T				0 T D	
8 - Severe Abnormal			HOX 1	1 M	1 1
• • • • • • • • • • • • • • • • •			(b)+103 (b)+103 (b)+103 (b)+103 (b)+103 (b)+103 (c)+10	0 Severe	~1.1
4 Base Abnormal			dmJN 2	.0	ANA
2-			se 1	0-	
Jun1/23	7/23	Jan5/24 + -eb16/24 - - Anr4/24 -		0	1/23
Jun1/23 Aug2/23 Sep6/23	Nov27/23	Jan5/24 Feb16/24 Anr4/24	ł	Jun 1/23 Aug 2/23 Sep 6/23	0ct11/23 Nov27/23

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **EDL NA Recips-Byron Center** Sample No. : WC0877036 Received : 13 May 2024 Byron Center Powerstation, 10310 South Kent Road Lab Number : 06177377 Tested : 14 May 2024 Byron Center, MI Unique Number : 11023430 Diagnosed : 15 May 2024 - Don Baldridge US 49315 Test Package : MOB 2 Contact: Jake Ripke Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. Jake.Ripke@edlenergy.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: EDLBYR [WUSCAR] 06177377 (Generated: 05/15/2024 20:57:37) Rev: 1

Submitted By: STEWART WESLEY

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